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Free Paper Presentations

Free Paper Presentations 1 – Tuberculosis

OL-001 Prevalence of tuberculosis in Karachi Pakistan: Isolation, identification, molecular characterization and multi drug resistant (MDR) profile of *Mycobacterium tuberculosis* strains

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The 22 high TB burden countries (HBCs) account for approximately 80% of the estimated new TB cases are being reported each year, According to WHO, nearly 2 billion people (one third of the world's population) have been exposed to the pathogen and annually, 8 million people fall ill with, and 2 million people die from the TB disease worldwide. India and Pakistan share the largest number (<2million) with a sizeable population living below the poverty level.The problem has been aggrevated by AIDS factor.

Objectives: The alarming TB menace has warranted us to get the Pakistani population surveyed with reference to *Mtub*, Identification and multi drug resistance profile of the isolates to achieve the goals of effective therapeutic interventions.

Duly collected TB patients' specimen was subjected to classical and molecular identification (including PCR based strategies for strain identification and for screening of drug resistant genotypes). A total of 60 and 40 % (of *M.tub* isolates) were categorized as **'typical'** and **'atypical' strains** respectively. *rpo B* (**rifampicin**) marker is being exploited for molecular (PCR assisted approaches) identification of the typical strains.

Atypical strains of *M.utb* have dominated as the causative agent of the disease.The over all findings indicate that rifampicin and isoniazid resistant strains are the leading cause of MDR TB disease. Well planned drug intervention approach(es) need to be followed in addition to poverty alleviation in the developing world.

OL-002 Microarray-based immunogenesis associated gene expression profiling in osteoarticular tuberculosis cases

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Background: The pathogenic mycobacteria cause the deaths of millions of people every year. One of the reasons these pathogens are so successful is that they are able to invade and replicate within host macrophages, so study the difference in gene expression between the tuberculosis granulation tissue and normal tissue nearby the lesions is important for selecting the candidate of TB bio-therapy.

Methods: We made cDNA microarray in which 626 immunogenesis genes were involved. The tuberculosis lesions were in eleven osteoarticular tuberculosis, Paired mRNAs from normal osteoarticular tissue specimens from the same cases were labeled with different fluorochromes during cDNA probe synthesis in a reverse-transcription reaction. The signal intensity of each spot was measured by laser scanner and gene expression was quantified as the tubercle-to-normal fluorescence ratio (T:N ratio). The gene was overexpressed when the T:N ratio was greater than 2.0 and underexpressed when the ratio was less than 0.5.

Results: Among 626 immunogenesis associated genes there were 66 genes difference significant, of which 52 expressed higher and 14 lower in tuberculosis granulation tissue than that of the controls.

Conclusion: The numerous alterations of gene expression were present in tuberculosis lesions of osterarticular tuberculosis specimens. These results increase the understanding of the mechanisms used by pathogenic mycobacteria to cause disease, the host response to these organisms and provide new insights for antimycobacterial intervention strategies.

OL-003 Evaluation of tuberculosis control programme in Khartoum state for the year 2006

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Background: Tuberculosis (TB) is among the top ten causes of global mortality. Sudan is among the countries with high TB prevalence; with an estimated incidence of 90/100,000 smear positive cases. In 1993, the Khartoum state tuberculosis control programme was established. Since its establishment, however, the programme has never been adequately assessed.

Aim: To evaluate and describe the tuberculosis control programme in Khartoum State, Sudan in 2006; to find out if the programme achieved its global targeted goals; and to identify the challenges and needs for performing a good standard tuberculosis control programme.

Methods: A descriptive cross-sectional and retrospective study design was used. The study population was tuberculosis control departments at the levels of the state (n = 1), localities (n = 7), health areas (n = 19) and health